

2. Strategy

2.1 Strategic Vision, Goals, and Objectives for improving emergency response interagency wireless communications statewide.

MISSION: Create a Montana-wide, State of the Art, Public Safety Voice and Data Interoperability Communications System

VISION: A Seamless Communications System

GOALS:

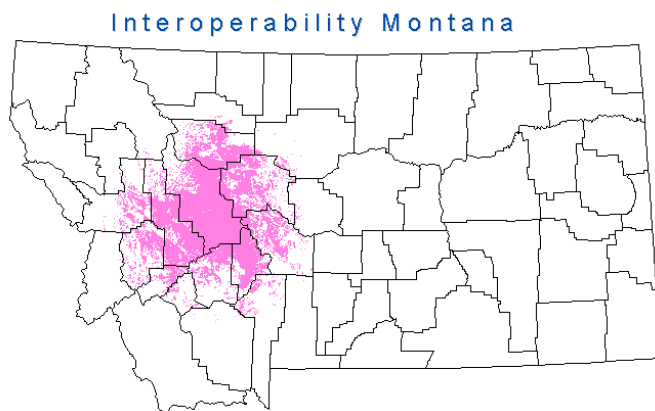
1. Vehicle by which Agencies, Stakeholders and Users Participating in the IM Project, Plan for an Integrated System of Management and Implementation.
2. Ensure a Place at the Table for Relevant Agencies and Users that Formalizes Equality in Decision-Making.

The State of Montana's Homeland Strategic Plan requires the establishment of a Montana-wide interoperable communications public safety system. To that end, Montana Consortia directors formed the Interoperability Montana (IM) Project through a Memorandum of Understanding signed on November 14, 2005.

The nine consortia (I-15/I-90, Big Sky 11, Central Montana, Eastern Tier, Northern Tier, South Central Montana, Tri-County, Western Interoperability and Mobile Data Terminal), now with 3 State of Montana agencies (Highway Patrol, Department of Transportation, Department of Natural Resources & Conservation), collectively represent all 56 Montana counties and 7 Indian Nations in addressing their public safety communications needs. Joining the IM Project are multiple partners at the local, state, tribal and federal level.

The IM Project is building on Concept Demonstration Project I (CDP I) and Concept Demonstration Project II (CDP II) to create a system which will seamlessly link voice and data systems used by federal, tribal, state, local and private sector public safety responders.

Figure 7: CDP I Coverage



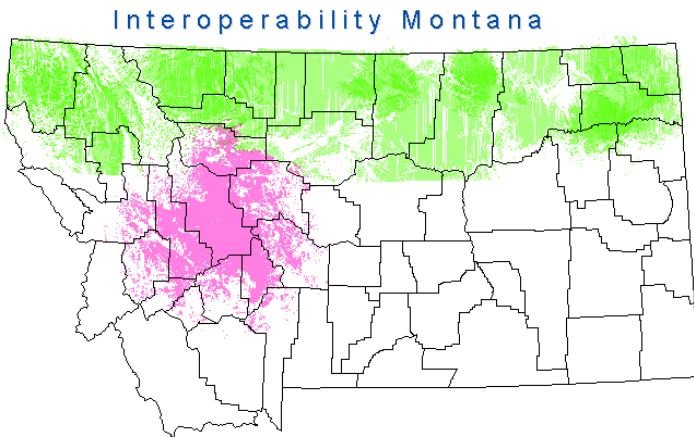
Concept Demonstration Project I

CDP I was completed in Lewis & Clark County and established an 11 site P25 trunked-hybrid Motorola Smartzone system consistent with the SIEC Definition and Technical Requirements.

Concept Demonstration Project II

CDP II is currently under development in the Northern Tier and is scheduled for completion by the fall of 2008. It builds off of the CDP I and links 25 radio sites into the IM system.

Figure 8: CDP I & II Coverage



CDP I and CDP II (when operational) will provide for a single public safety communications system that serves 13 counties and 4 Indian Nations, with radio communications along Montana's 550 mile border with Canada.

Interoperability Montana is a grass roots communications interoperability project developed to provide for the safety of our responders and citizens. Our strategy links single county Concept Demonstration Plan I (CDP I)

in Lewis & Clark County with the entire Northern Tier Interoperability Project (CDP II) and continues to extend Interoperability Montana throughout the state.

Narrow Band

The Federal Communications Commission (FCC) has ruled that for public safety agencies operating in the VHF frequency band, all users must operate on narrowband frequencies. The FCC will not allow any further operation on wideband frequencies after January 2013, and no wideband radios will be manufactured after 2009. Part of the IM strategy is to make sure Montana public safety agencies will be able to make the narrow-banding deadlines. Part of the IM plan involves distributing used narrowband radios to small agencies when larger agencies obtain P25 conventional or trunked equipment.

P25 Conventional Narrow Band

The SIEC and IMPD have adopted the P25 standard. All radios purchased by the project have been and will continue to be P25 compliant trunking or future trunking capable. Converting agencies to P25 has the advantage of letting them use the radios in wide and narrowband mode, and in digital or analog. The P25 radios allow compatibility with the IM system and backward compatibility with legacy systems. New conventional radios purchased will be P25 and will also meet the FCC requirements.

Site Upgrades

The development of quality, dependable radio sites is a priority. All the technology in the world will do no good if the radio sites are not secure and dependable. This portion of the plan involves replacing and upgrading existing and new radio site to ensure that local and IM radio coverage is sufficient to meet partner requirements. Improving these sites will include adequate grounding and emergency power, along with the ability to install the trunked radio system and digital microwave equipment. Site upgrades may include towers, generators, electrical supply, shelters, grounding, and supporting equipment.



Microwave Connectivity

Once adequate site upgrades are ensured, digital microwave connectivity will be initiated at improved sites that need trunked radio coverage as designated by individual consortia. Microwave technology was selected because the IM Project is based on a VHF-radio system build-out and coverage requirements include mountain tops and other remote sites that are not served by fiber or other data carriers. Without digital connectivity back to the Master Control Site, full trunking capabilities will not be possible. Microwave or other digital connectivity is also required for expansion of the Mobile Data Network.

Hybrid System

The ultimate target for the IM Project is a statewide trunked/conventional hybrid P25 system available to all local, tribal, state and federal responders in Montana. This goal will involve the narrow banding of all agencies in Montana, move to a P25 infrastructure, establishing quality sites with adequate radio coverage and connectivity with the digital microwave system. P25 trunked infrastructure will be installed on sites selected by the IMPD and connected to the Master Control Site in Helena.

Completion of the IM Project is to be accomplished in a phased approach. Given that total funding for this project is not available at this time, the project will be implemented in a phased approach roughly according to the guidelines above, as set by the IMPD. Several phases may be in process at the same time. The project is designed so that if funding were to stop at any point, interoperability across the state would be advanced and sites upgraded for additional dependability. The project would then resume when funding became available.

2.2 Plan for coordination with neighboring states and Canada.

The IM Project has opened lines of communication with the neighboring states of Idaho, North and South Dakota, Wyoming and with the Canadian provinces of Alberta, British Columbia and Saskatchewan. Over the past year and a half, representatives from each of these neighboring states have visited Montana and given presentations about their radio communications interoperability programs at different IM Project Directors (IMPD) meetings.

A coordination plan is in process with the state of Idaho because Idaho has a need to use the southwestern loop of the IM microwave network to provide connectivity between northern and southern Idaho. This connectivity is not possible within the state of Idaho because of geographic barriers and large stretches of National Forest land. Montana has an Idaho access point at its Sawtell communications site, and plans are to build another one at Look Out pass on the western border. Other interstate partnerships also need to be pursued. North Dakota, South Dakota and Wyoming may be interested in utilizing adjacent portions of the Montana network. Plans may include sharing border sites because ISI links are in place for roaming as necessary and permitted. Dispatch for some western North Dakota communities is currently performed by Eastern Montana towns. These existing partnerships could be expanded.

A Western Border Interoperability Working Group has been underway for the past three years. Membership consists of IM Project Directors, Montana's Public Safety Service Bureau, Montana's U.S. Attorney General's Office, the U.S. Department of Interior, the Royal Canadian Mounted Police (RCMP), Industry Canada and Public Safety Canada from the provinces of Alberta, British Columbia and Saskatchewan, along with public safety providers from Idaho,



North and South Dakota and Wyoming Interoperability projects. The purpose of this working group is to provide a platform for international, federal, tribal, state, provincial, and local coordination of public safety communications and technologies with an emphasis on bordering areas. The Western Border Working Group is providing planning and interface for radio interoperability issues and coordinating among Montanan and Canadian public safety agencies. This working group continues to provide opportunities for networking, dialogue and the establishment of partnerships.

The Province of Alberta, Royal Canadian Mounted Police has offered a future demonstration to the Northern Tier Technical Committee of its ACU1000 interoperable component gateway device that affords temporary patching of radios in different frequency ranges. This would facilitate connectivity between Canadian and United States law enforcement partners. Customs and Border Protection have obtained three units to be staged in the Great Falls, Havre and Whitefish areas.

2.3 Plan for addressing data interoperability in addition to voice interoperability.

Mobile Data Systems that will be needed to provide interoperability and seamless communications for Public Safety Response Agencies to reach the goal of the System is *“no person shall lose his/her life because public safety officials can not communicate”*. The System is needed by each jurisdiction for its day to day activities and during joint responses to common disasters.

One of the strategic initiatives of the Interoperability Montana (IM) Project was the formation of a Mobile Data Terminal (MDT) Consortium made up of the following state and local government jurisdictions; Butte-Silver Bow County, Cascade County, City of Belgrade, City of Bozeman; City of Great Falls; City of Helena; Gallatin County; Lewis & Clark County, Montana Highway Patrol and Yellowstone County. The purpose of the board is to manage, operate and maintain a multi-county mobile data communications system.

The MDT Consortium is being built out statewide on the backbone. Currently, the Interoperability Montana Technical Committee (IMTC) is exploring what spectrum (UHF vs. 700 MHz) would ultimately serve Montana best. In addition, the MDT Consortium is allowingw local, state, tribal and federal enforcement agencies and emergency response personnel to receive mobile data communications services.

2.4 Strategy for addressing catastrophic loss of communications assets by developing redundancies in the communications interoperability plan.

The statewide radio network must integrate the needs of the nine local Consortia that make up the Interoperability Montana Project Directors (IMPD), the Air Force, the National Guard (MTNG), the FBI, the Montana Department of Transportation (MDoT), the Montana Highway Patrol (MHP), and the Montana Department of Natural Resources (DNRC). To calculate the backbone capacity, the needs of the individual sites must be identified. Capacity needs are dictated by trunked site locations, which of the IM partners will use a given site, the capacity requirement for each partner, and the backhaul endpoint for each partner’s traffic.



Once the needs of the individual sites are known then the backbone is designed to meet those needs. The initial vision for the state wide microwave backbone was a single large ring with the Master Control Site based in Helena. It was decided to place a 2nd Master Control Site in Eastern Montana. This site will reduce the T-1 capacity required for Helena.

Rings will improve system resiliency by creating redundant paths for system traffic. Although the large state wide ring proved to be too bandwidth intensive, the IM Backbone Design Team was able to form smaller regional rings. These rings provide redundant paths for the traffic in their region without incurring the large backhaul penalty of the state wide ring. The design team created regional rings where applicable. All sites, even those protected by a ring, will utilize hot standby equipment as an additional measure of redundancy.

Included in the redundancies of the backbone network plan are

- **Link Redundancy:** Some partners have requested redundant T-1 links. The redundancy will protect against the loss of a link within the system.
- **Equipment Redundancy (Hot Standby):** All sites will be equipped with a secondary transmitter and receiver that will automatically switch in the event of a failure. This hot standby technology protects against the loss of data feeds..
- **Path Redundancy:** Some sites are part of a regional ring. These rings will protect against the loss of an entire site by providing an alternate route for the affected traffic. Other communications mediums may be available to complete rings and/or augment the microwave system. For example: an agreement has been signed with use BNSF Railway to use its fiber optic cable through Glacier National Park to complete a northwestern ring that connects Big Mountain and Divide Mountain.

2.5 Plan compliance with the National Incident Management System (NIMS) and the National Response Plan.

Montana's Statewide Communications Interoperability Plan (SCIP) complies with the National Incident Management System (NIMS) and the National Response Plan. When a major incident occurs, assistance may be needed from other jurisdictions, tribes, the state or federal government.

Montana's 2005 Mutual Aid Handbook adopts Incident Command System (ICS) conventions and outlines plans for pre-planning, basic interagency operations and inter-discipline operations. The handbook provides a consistent template for local, state, tribal and federal local governments as well as private sector and non-governmental organizations to work together effectively and efficiently to prepare for, prevent, respond to and recover from domestic incidents. It provides a comprehensive all-hazards approach to incident management that stresses preparedness, mutual aid and resource management. Please see Appendix E for the 2005 Mutual Aid Handbook.

2.6 Strategy that addresses communications interoperability with the safety and security elements of the major transit systems, intercity bus service providers, ports, and passenger rail operations within the state.

Montana's transit systems utilize Montana's Mutual Aid system to communicate during emergencies. Transit emergency procedures are coordinated at the local level with public safety officials through their Local Emergency Planning Committees (LEPC) or Tribal Emergency



Response Committees (TERC). The only passenger rail service in the state, Amtrak, as well as city bus providers, all rely on the State's Mutual Aid system for emergency response communications procedures.

Montana Rail Link presented emergency response training tours to local public safety officials in eight locations during the fall of 2006. In addition, the State of Montana signed a letter of intent in July, 2007 to enter into a five-year agreement with the BNSF Railway, which operates a major railroad network throughout Montana and within two Canadian provinces, to provide telecommunications services to state and county agencies. The purpose of this agreement was to partner with the Northern Tier Interoperability Consortium (NTIC) and the Interoperability Montana (IM) Project in an effort to provide improved public safety communications in the northern sections of Montana. The partnership involves supplying towers, generators and equipment shelters at sites in Lincoln County and on U.S. Highway 2 below Glacier National Park. This partnership will greatly improve radio communications coverage on the long stretch of roadway below Glacier National Park that currently does not have reliable coverage. This stretch of highway is a major concern for local, state, tribal and federal public safety officials.

2.7 Periodic review and revision of the state plan.

Establishing Priorities

To establish priorities and to review and revise the state plan for interoperability the Interoperability Montana Project Directors (IMPD) will continue to use consortium assessments, the State Agency Needs Assessments, and information collected from partners around the state.

This review and revision process will take place every three years with ongoing assessments performed by the local consortiums.

Currently, the Interoperability Montana Technical Committee (IMTC) has set priorities based on the business cases presented in each consortium or across multiple consortia. The technical and performance merits of each business case are discussed in the IMTC, with documentation collected and analyzed. The IMTC then votes to approve priorities, and sends these recommendations to the IMPD. The IMPD either approves or modifies the recommendations and votes to apply appropriate funding to a project.

These priorities and business cases are analyzed on a continual basis based on the changing project environment. The IMPD has the opportunity to move various projects up and down the priority list according to funding changes, partnership opportunities and business environment changes.

